



# Pacific Bluefin Tuna: Frequently Asked Questions

## Background

[The International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean \(ISC\)](#) released the most recent assessment of Pacific bluefin tuna (*Thunnus orientalis*, PBF) in July 2018. NOAA Fisheries participates in these assessments and the last one was conducted in 2016. Since 2013, NOAA Fisheries has listed Pacific bluefin tuna as overfished and subject to overfishing.

## Pacific Bluefin Population Status Questions & Answers

### **1. What is the status of the Pacific bluefin tuna population?**

Since 2013, NOAA Fisheries has listed Pacific bluefin tuna as overfished and subject to overfishing. The 2016 spawning stock biomass (SSB) of Pacific bluefin tuna is still depleted with a slight increase to 3.3% unfished SSB up from 3.0% unfished SSB for 2014.

The amount and rate of bluefin harvested each year continues to be high with fisheries in the western Pacific Ocean having the greatest impact on the population. In addition, fishing rates are above most potential reference points (or a benchmark against which the status of the population is assessed). The 2018 stock assessment, which was reviewed and finalized in July is available here: [ISC18 Reports](#).

In addition, in 2017, NOAA Fisheries determined that the Pacific bluefin tuna stock was not at risk of extinction. Take a look here: [Pacific Bluefin Tuna ESA Status Review](#).

### **2. Do the results of the assessment indicate that the management measures of the Inter-American Tropical Tuna Commission (IATTC), Western and Central Pacific Fisheries Commission (WCPFC), and the Pacific Fishery Management Council that were put in place for 2015 and 2016 are working?**

The results of the 2018 assessment are based on data through 2016 and early 2017, and therefore, are not expected to show the full impact of more restrictive management measures implemented for 2015 and 2016. Additionally, the ISC did not specifically evaluate the impact of the management measures on the status of the stock, so it is difficult to say, at this point, if the moderate increase in SSB is due to management measures or other factors.

However, the assessment did project the stock's performance based on its status in 2016, management measures in place now, as well as other harvest scenarios. Overall, the analyses indicate that the management measures implemented in 2015 and 2016 are highly likely to

achieve the initial biomass target that the IATTC and WCPFC adopted for rebuilding the stock, under a low recruitment scenario. Additionally, the second target recommended by the Joint IATTC-WCPFC/NC Working Group and subsequently adopted by the WCPFC is also likely to be met. Experts have not yet determined the amount of biomass that would indicate the population is recovered or rebuilt.

***3. If there are so few bluefin, why are California fishermen seeing so many?***

Of the tunas, Pacific bluefin has the broadest geographic range, spanning large expanses of the Pacific Ocean. They spawn in the Western Pacific Ocean (WPO) between central Japan and the northern Philippines, and in the Sea of Japan from April through August. A portion of these fish migrates to waters off the U.S. West Coast and Mexico. These migration patterns are influenced by oceanographic conditions and vary among years and the exact proportion that migrates is unknown. It is possible that in the last few years a larger proportion of the juveniles have migrated from the spawning grounds to the U.S. West Coast and Mexico than has in the past. Increases in the number of fish observed locally may also be due to conditions along the west coast having shifted schools further north and shoreward.

***4. If there are only supposed to be juveniles off the West Coast of the USA, why are we seeing such large bluefin?***

For many, years, the bluefin caught off the West Coast ranged in size from about 23 to 55 inches (approximately 1-4 years old). A small number of bluefin larger than this have on occasion been observed in the region, and more larger and older fish have been caught off our coast during the last few years. In fact, the average size observed in our recreational fishery samples has increased to 39-49 inches with the biggest fish at 72 inches. Bluefin are reported to mature at 3-5 years of age. However, for a fish to be considered “mature”, it has to be spawning, not just of a certain size or age. Reproductive studies showed that 50% of age-4 fish are mature and fully mature at age 5. We know of no evidence that bluefin are spawning off the West Coast. So while some the fish off the West Coast are quite large, they are generally considered to be juveniles. NOAA Fisheries researchers will continue analyzing bluefin from the region to determine their ages and to determine if any are reproductively mature.

## Pacific Bluefin Stock Assessment Questions & Answers

***5. How is the status of the bluefin tuna population determined?***

NOAA Fisheries scientists work together with international scientists through the International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean (ISC)\* to review and analyze the best available data to assess the status of the population. Using data from commercial and recreational fisheries across the Pacific as well as on-the-water scientific observations, stock assessments describe the past and current status of the population. Additionally, the stock assessment process includes predictions about the performance of current and future management measures in rebuilding the stock.

\*Established in 1995, the goals of the ISC include: (1) to enhance scientific research and cooperation for conservation and rational utilization of the species of tuna and tuna-like fishes

that inhabit the North Pacific Ocean; and (2) to establish the scientific groundwork for the conservation and rational utilization of these species in this region. ISC's voting member nations are Canada, Taiwan, Japan, Republic of Korea, Mexico, the People's Republic of China and the U.S.A.

***6. Are data from Eastern Pacific Ocean fisheries used in the stock assessment?***

Data from Eastern Pacific Ocean (EPO) fisheries are used in the North Pacific bluefin tuna stock assessment. Size composition and catch data from the EPO are used and these are important data. The stock assessment assumes (and science corroborates) that there is one stock or population of Pacific bluefin tuna in the entire North Pacific Ocean, and all catch from all fisheries taking Pacific bluefin are included in the modeling process. Size-composition data from EPO commercial fleets provide the assessment model with information on the age classes that comprise the catch.

***7. Why are bluefin data from spotter planes not used in the assessment? They are seeing many bluefin in the EPO!***

Two things affect the amount of Pacific bluefin available in the EPO: Migration to the EPO from the WPO and retention within the EPO. Pacific bluefin have a very broad geographic range, spanning large expanses of the Pacific Ocean. They spawn in the Western Pacific Ocean (WPO) south of Japan in the East China Sea off the Nansei and Ryuku Islands to the northern Philippines, and in the Sea of Japan from April through August. A portion of these fish migrate to waters off the U.S. West Coast and Mexico and that proportion is influenced by varying ocean conditions. Because the fraction of the total population migrating to the EPO varies and is unknown, what the spotter pilots see isn't necessarily an accurate depiction of the whole population. Using that information would require a large-scale full-ocean migration study, which would be extremely costly. We are confident the trends that the ISC is seeing are accurate.

***8. How reliable are the data being reported from Japan, Taiwan, China, and Korea? Do they have the same level of enforcement and compliance as we do?***

Member countries that signed agreements for two international commissions, Western and Central Pacific Fisheries Commission (WCPFC) and Inter-American Tropical Tuna Commission (IATTC), have agreed to provide data from their fisheries and biological studies. Staff and Members, including the U.S., of these organizations review data submissions. The data provided by other nations appears to be consistent with data from other nations as well as internally consistent.

***9. How often is the Pacific bluefin tuna assessed?***

The ISC aims to fully assess fish populations once every three years and update assessments periodically. They assessed the status the Pacific bluefin tuna population in 2012, 2014, 2016 and 2018.

## Pacific Bluefin Management Questions and Answers

### **10. What are other countries doing to reduce their impact?**

All members of the Western and Central Pacific Fisheries Commission (WCPFC) and Inter-American Tropical Tuna Commission (IATTC) are faced with catch reductions. The WCPFC's conservation and management measure 2017-08 stipulates that:

- All members must reduce their fishing effort on Pacific bluefin to below the average amount they fished in 2002 to 2004 in the WPO.
- All members must reduce their catch of Pacific bluefin smaller than 30 kg (66 lbs) by 50% of the average amount fished in 2002 to 2004 in the WPO. However, members may use some of their catch limit for smaller fish to catch larger fish.

Given the 2018 ISC projections are optimistic, the WCPFC may consider increasing catches when it meets in December.

In addition, the [WCPFC Harvest Strategy](#) with the aim of rebuilding the stock's SSB to the median (6.7% unfished SSB) by 2024 with at least 60% probability, and to 20% unfished SSB by 2034, or 10 years after reaching the initial rebuilding target, whichever is earlier, with at least 60% probability. IATTC also adopted the initial rebuilding target.

The IATTC's resolution C-16-08 stipulates that total commercial catches by all Members could not exceed 6,600 mt in 2015 and 2016 combined in the EPO. It is expected that the IATTC will adopt catch limits for 2019 and possibly beyond in August 2018.

### **11. Will current management measures help the stock?**

Projections from the 2018 stock assessment suggest that the spawning stock will reach WCPFC's and IATTC's biomass rebuilding target for 2024 with a 98% probability, and the WCPFC's second biomass rebuilding target within 10 years after reaching the initial rebuilding target or by 2034, with a 96% probability, both of which are higher than the probabilities specified in the harvest strategy. The initial rebuilding target for spawning biomass is substantially higher than the 2016 spawning biomass.

### **12. How are Pacific bluefin tuna managed?**

Pacific bluefin tuna fisheries in the eastern Pacific Ocean (EPO) are primarily managed by the IATTC, and fisheries in the western and central Pacific Ocean are primarily managed by the WCPFC. Based on genetic information and spawning distribution, Pacific bluefin tuna is assessed as a single stock. The member nations of the WCPFC and IATTC are responsible for implementing any of the organizations' binding decisions. In the case of bluefin, the U.S. government elicits input from both the Pacific Fishery Management Council and the Western Pacific Fishery Management Council.

In addition, a joint working group of the IATTC and the Northern Committee (NC) of the WCPFC met in September 2017 to discuss a long-term framework for rebuilding Pacific bluefin tuna. The joint working group will meet again in September 2018.

**13. Now that the Pacific bluefin tuna population shows signs of recovery will fisheries management respond and increase the limits?**

An international rebuilding effort is underway to reduce fishing impacts, bring the stock back to healthy levels, and ensure the sustainability of future harvests. Management will adapt with the best available science. Because Pacific bluefin tuna are so productive, we hope that with international cooperation the population will recover and allow for fishing limits to be revisited. WCPFC may consider increases in catch limits given that the ISC projections are optimistic - there is at least a 75% probability of meeting the initial rebuilding target. The IATTC will discuss catch limits when it meets in August as its current Pacific bluefin resolution expires at the end of 2018.

**Summary annual catch data from 1952-2017. Data are from the ISC18 Plenary Report.**

<b>Nation (Commercial)</b>	<b>Landings range (mt) 1952-1999</b>	<b>Landings range (mt) 2000-2014</b>	<b>Landings (mt) in 2013</b>	<b>Landings (mt) in 2014</b>
<b>Taiwan</b>	0 - 3089	214 - 2,782	335	483
<b>Japan</b>	7134 - 34,029	6,093- 24,572	6,411	9,605
<b>Korea</b>	0 - 1054	604 - 2,601	604	1,311
<b>Mexico</b>	0 - 3700	863 - 9,927	3,154	4,862
<b>United States</b>	508 - 15,482	56 - 1,073	820	804
<b>All Nation Commercial Total</b>	<b>8,627 - 40,144</b>	<b>11,325 - 33,964</b>	<b>11,325</b>	<b>17,065</b>
<b>United States Recreational Total</b>	1 - 422	12 - 809	809	398

Several nations fish for Pacific bluefin tuna in the Pacific Ocean, with catches from Japan and Mexico accounting for most of the catch. The U.S. commercial and recreational catch in recent years has averaged about 2.8 percent of the total worldwide catch.

**14. If purse-seine vessels are the driving force behind the declines, then why are they still allowed to catch very young bluefin?**

Purse-seine vessels from members of the WCPFC and IATTC, including the U.S., Mexico, and Japan, must comply with reduced catch limits, according to the international regulations agreed upon by the respective international organizations (see above). Additionally, limits have been placed on the amount of bluefin that a U.S. purse seine vessel is permitted to catch in a single trip in the eastern Pacific.